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# *Indian Standard*

# SPECIFICATION FOR ISOPROPYL MYRISTATE FOR COSMETIC INDUSTRY

## *( Second Revision )*

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**INDIAN STANDARDS INSTITUTION**
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2 *June* 1983

# *Indian Standard*

# SPECIFICATION FOR ISOPROPYL MYRISTATE FOR COSMETIC INDUSTRY

## *( Second Revision )*

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# *Indian Standard*

# SPECIFICATION FOR ISOPROPYL MYRISTATE FOR COSMETIC INDUSTRY

## *( Second Revision )*

## 0. FOREWORD

**0.1** This Indian Standard ( Second Revision ) was adopted by the Indian Standards Institution on 12 May 1983, after the draft finalized by the Cosmetics Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

**0.2** This standard was originally published in 1969 and subsequently revised in 1977. Initially while reviewing this standard the Sectional Committee had agreed to indicate separately the essential and optional requirements. Subsequently this was formed non-implementable for Certification and therefore in this revision, only a single set of requirements has been stipulated.

**0.3** Isopropyl myristate is essentially a mixture of isopropyl ester of myristic acid and small amounts of isopropyl ester of lauric and palmitic acids. It is being increasingly used in the cosmetic industry because of its excellent emollient and solvent properties. Its intrinsic advantages are that it is colourless, practically odourless and is not prone to oxidation. It has a very low degree of irritability and exhibits non-sensitizing properties. Isopropyl myristate imparts a characteristic non-greasy feel when used in creams, lotions, both oils and other cosmetics.

**0.4** In the preparation of this standard, assistance has been taken from specification No. 40 of 1967 'Isopropyl myristate', of the Toilet Goods Association Inc, USA and Specification No. 22 of 1958 'Isopropyl myristate', of the Toilet Preparations Federation Ltd, UK.

**0.5** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

## 1. SCOPE

**1.1** This standard prescribes the requirements and the methods of sampling and test for isopropyl myristate for cosmetic industry.

## 2. REQUIREMENTS

**2.1 Description** — The material shall be in the form of colourless, mobile liquid which is practically odourless.

**2.2** The material shall comply with the requirements given in Table 1 when tested according to the methods given in Appendix A and IS : 548-1964†. Reference to the relevant clauses of Appendix A and IS : 548-1964† is given in col 4 and 5 of the table.

### TABLE 1 REQUIREMENTS FOR ISOPROPYL MYRISTATE FOR COSMETIC INDUSTRY

| SL No. | CHARACTERISTIC | REQUIREMENT | METHOD OF TEST, REF TO CL No. IN | |
|---|---|---|---|---|
| | | | Appendix | IS : 548-1964* |
| (1) | (2) | (3) | (4) | (5) |
| i) | Refractive index at 25°C | 1·432 to 1·434 | — | 10 |
| ii) | Acid value, *Max* | 1·0 | — | 7 |
| iii) | Titre of separated fatty acids, °C | 47 to 53 | — | 12 |
| iv) | Saponification value | 190 to 220 | — | 15 |
| v) | Iodine value, *Max* | 1·0 | — | 14 |
| vi) | Arsenic, ppm, *Max* | 2 | A-3 | — |
| vii) | Heavy metals, ppm, *Max* | 30 | A-4 | — |
| viii) | Relative density at 25/25°C | 0·847 to 0·853 | — | 11·3 |
| ix) | Residue on ignition, percent by mass, *Max* | 0·02 | A-5 | — |

*Methods of sampling and test for oils and fats ( *revised* ).

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*Rules for rounding off numerical values ( *revised* ).

†Methods of sampling and test for oils and fats ( *revised* ).

## 3. PACKING AND MARKING

**3.1 Packing** — The material shall be packed in suitable containers as agreed to between the purchaser and the supplier.

**3.2 Marking** — Each container shall be suitably marked with the following information:

a) Name of the material,
b) Name of the manufacturer,
c) Batch or code number, and
d) Net mass.

**3.2.1** The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

## 4. SAMPLING

**4.1** Representative samples shall be drawn as prescribed in **3** of IS : 548-1964*.

**4.2 Number of Tests** — Tests for all the characteristics given in **2** shall be carried out on the composite sample.

**4.3 Criteria for Conformity** — The material shall be taken to have conformed to this specification if the composite sample satisfied all the requirements given in **2**.

## 5. TEST METHODS

**5.1** Tests shall be carried out according to the methods prescribed in Appendix A and in IS : 548-1964*.

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*Methods of sampling and test for oils and fats ( *revised* ).

## APPENDIX A

( *Clauses* 2.2 *and* 5.1 )

## METHOD OF TEST FOR ISOPROPYL MYRISTATE FOR COSMETIC INDUSTRY

### A-1. QUALITY OF REAGENTS

**A-1.1** Unless specified otherwise, pure chemicals and distilled water ( *see* IS : 1070-1977* ) shall be used in tests.

NOTE — ' Pure chemicals ' shall mean chemicals that do not contain impurities which affect the results of analysis.

### A-2. SEPARATION OF FATTY ACIDS

**A-2.1 Reagents**

**A-2.1.1** *Isopropyl Alcohol* — conforming to IS : 2631-1971†.

**A-2.1.2** *Potassium Hydroxide*

**A-2.1.3** *Dilute Hydrochloric Acid*

**A-2.2 Procedure** — In a saponification flask warm 30 ml of isopropyl alcohol and 15 g of potassium hydroxide, shaking until a part of the alkali has dissolved. Add 30 g of the material and heat under reflux. As soon as the soap separates, add 10 ml of water and reflux for 2 hours. In the mean time, add two more 10-ml portions of water to avoid layer formation and precipitation. Disconnect the reflux condenser, pour the mixture into a 400-ml beaker, boil off the alcohol, add 150 ml of water and acidify with dilute hydrochloric acid. Filter off the separated fatty acids, wash with water till free of mineral acid, dry and use for the test for titre.

### A-3. TEST FOR ARSENIC

**A-3.1 Reagents**

**A-3.1.1** *Concentrated Sulphuric Acid* — *see* IS : 266-1976‡.

**A-3.1.2** *Concentrated Nitric Acid* — *see* IS : 264-1976§.

**A-3.2 Procedure**

**A-3.2.1** *Preparation of Sample* — Weigh 2·000 g of the sample in a Kjeldahl flask of 500 ml capacity. Add 15 ml of concentrated sulphuric acid followed by 4 ml of concentrated nitric acid. Heat cautiously.

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*Specification for water for general laboratory use ( *second revision* ).

†Specification for isopropyl alcohol.

‡Specification for sulphuric acid ( *second revision* ).

§Specification for nitric acid ( *second revision* ).

Add drop by drop more nitric acid, if required, from a pipette to speed up the oxidation of the sample. The two total amount of nitric acid shall be noted for use in the control test. When oxidation is complete ( the solution is clear and faint yellow ), add 20 ml of water and again boil to fuming. Ensure removal of all nitric acid.

**A-3.2.2** Carry out the test for arsenic as described in IS : 2088-1971* with the solution prepared in **A-3.2.1.** Compare the stain obtained with that produced with 0·004 mg of arsenic trioxide.

## A-4. TEST FOR HEAVY METALS

### A-4.1 Apparatus

**A-4.1.1** *Nessler Cylinders* — 50 ml capacity.

### A-4.2 Reagents

**A-4.2.1** *Ammonium Acetate Solution* — 10 percent.

**A-4.2.2** *Ammonium Citrate Solution* — Dissolve 8·75 g of citric acid in water, neutralize with ammonia and dilute with water to 100 ml.

**A-4.2.3** *Ammonium Hydroxide* — 10 percent ( *m*/*m* ).

**A-4.2.4** *Potassium Cyanide Solution* — 10 percent.

**A-4.2.5** *Sodium Sulphide Solution* — 10 percent.

**A-4.2.6** *Standard Lead Solution* — Dissolve 1·600 g of lead nitrate in water, and 10 ml of concentrated nitric acid and dilute to 1 000 ml with water. Pipette out 10 ml of the solution and dilute it again to 1 000 ml with water. One millilitre of the final solution contains 0·01 mg of lead ( as Pb ). The solution should be freshly prepared.

### A-4.3 Procedure

**A-4.3.1** *Preparation of Sample* — Treat 2·000 g of the sample as prescribed in **A-3.2.1.**

**A-4.3.2** Take the solution prepared in **A-4.3.1** in a Nessler cylinder, add 10 ml of ammonium acetate solution, 5 ml of ammonium citrate solution, 5 ml of ammonium hydroxide and 1 ml of potassium cyanide solution and dilute to 50 ml with water; then add two drops of sodium sulphide solution and mix well. In another Nessler cylinder, carry out a control test using a 6 ml of standard lead solution and the same quantities of other reagents as used in the test with the material.

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*Methods for determination of arsenic ( *first revision* ).

**A-4.3.3** The material shall be taken as not having exceeded the limit prescribed in Table 1 if the intensity of colour produced with the material is not greater than that produced with the control test.

## A-5. RESIDUE ON IGNITION

### A-5.1 Apparatus

**A-5.1.1** *Platinum or Silica Dish*

**A-5.1.2** *Furnace* — capable of maintaining temperature within 600 ± 25°C.

**A-5.2 Procedure** — Weigh accurately about 3 g of the material in tared platinum or silica dish. Slowly burn the material and finally ignite it in furnace at 600 ± 25°C until all carbonaceous matter has disappeared. Cool in a desiccator and weigh. Repeat till constant mass is obtained.

### A-5.3 Calculation

$$\text{Residue on ignition, percent by mass} = 100\,\frac{(M_1 - M_2)}{M}$$

where

$M_1$ = mass in g of the ignited residue with the crucible,

$M_2$ = mass in g of the crucible, and

$M$ = mass in g of the material taken for the test.

# AMENDMENT NO. 1 MARCH 2002
# TO
# IS 5356 : 1983 SPECIFICATION FOR ISOPROPYL MYRISTATE FOR COSMETIC INDUSTRY

*( Second Revision )*

[ *Page* 4, *Table* 1, *Sl No.* (vi) and (vii) ] — Delete and renumber the subsequent serial numbers.

( *Pages* 6 and 7, *Appendix* A, *clauses* **A-3** *to* **A-4.3.3** ) — Delete and renumber the subsequent clauses.

( PCD 19 )

Reprography Unit, BIS, New Delhi, India